



#### **QUARTERLY MEETING**

Monday, September 15, 2008  
San Jose City Hall  
200 E. Santa Clara Street  
San Jose, CA 95113  
10:00 a.m. – 1:00 p.m.

A meeting of the California Commission for Economic Development was held on September 15, 2008.

#### **Commission Members Present**

Lt. Governor John Garamendi, Chair  
Mr. Tom Nassif, Vice Chair  
Ms. Virginia Chang Kiraly  
Mr. Demos Vardiabasis, Ph.D.  
Ms. Ashley Swearengen  
Mr. Hector Barreto  
Mr. Aubry Stone  
Mr. Daniel Curtin

A quorum was present.

#### **Commission Members Not Present**

Honorable Bob Dutton  
Honorable Mike Machado

Honorable Leland Yee, Ph.D.

Honorable Lori Saldaña  
Ms. Forescee Hogan-Rowles  
Mr. Omar Benjamin  
Mr. David Crane

#### **Others in Attendance**

Mr. Richard Baum, Executive Director  
Ms. Michele Gault, Deputy Director  
Ms. Leslie Tamminen, CED Consultant  
Ms. Nettie Hoge, Policy Director, Lt. Governor's Office  
Andrew Chung, Lightspeed Venture Partners  
Tom McCalmont, ReGrid Power and SolarTech  
Chuck Reed, Mayor, City of San Jose

### **I. Welcome and Introductions**

Lt. Governor John Garamendi called the meeting to order. He stated that one of the real attributes and usefulness of the Commission for Economic Development is to give Commissioners an opportunity to exchange ideas informally, and that's why the meeting is starting a bit late. He noted that he was at the new Underwriters Laboratories solar testing facility in San Jose earlier in the morning. He thanked the commissioners for joining the meeting and invited them to make brief self-introductions.

### **II: Special Presentations**

Executive Director Richard Baum introduced the first two guest speakers: Andrew Chung, a principal at Lightspeed Venture Partners, and Tom McCalmont, President and CEO of Campbell, CA-based REgrid Power and chairman of SolarTech.

#### **a. Venture Capital Investment in Green Technology – Andrew Chung**

Andrew Chung focused his remarks on capital investment in the area of clean technology. He described his company, Lightspeed Venture Partners, as a global venture capital firm with \$2.1 billion of capital under management with 22 employees. He noted that many of the start-ups that Lightspeed invests in are heavily influenced by policy regulation, which affects their ability to influence the markets and the economy.

Mr. Chung continued his presentation, using PowerPoint slides. He explained that global energy needs are rising at an unprecedented rate. He noted that the amount of electricity generation, rates and energy needs have doubled since 1980 and observed that, in China (recently #2) the need has gone up tenfold

since 1980. Most of the electricity used now is still being supplied by fossil fuels. He provided additional background on carbon dioxide emissions in the atmosphere over time and the impact they have had on the earth's climate.

He compared the U.S. to other countries, with respect to renewable energy sources. In terms of hydroelectric, the U.S. is below the world average, and far below Scandinavian and European countries. In terms of solar and biofuels, the U.S. is at about average with the world, but it is still lagging behind other industrialized nations.

So what is the solution to this energy need challenge, and what do investors think is the most effective way they can address these problems? Clean tech is really an umbrella term that covers a broad portfolio of sectors, including solar, wind, fuels, and others. Using solar as an example, the traditional method for making solar cells and putting them on rooftops offers a lot of opportunities for economic growth, from the polysilicon material used, to how to create the wafers, to how to finance and install solar cells on rooftops. For entrepreneurs there are numerous opportunities for investments, not just for solar energy, but for all of the other sectors.

Lightspeed has made multiple investments in a number of these sectors, including solar companies, biofuel companies, storage technologies (including LED lighting technologies), and media research companies. Mr. Chung explained why venture capital investors are interested in the clean tech area.

**1) It is a massive market** (multi-trillion dollars) and venture capitalists like large markets.

**2) Shift in economics.** The cost of producing a solar cell is about 100 times less expensive than it was in 1979. This has created a situation where solar power generation is becoming price competitive against gasoline. Solar cells have been coming down in cost in a very predictive way, similar to semiconductors. Technology and innovation are pushing the prices down.

**3) Government imperatives:** For the first time in a long time, state governments, local governments and the national government (to a certain extent) have begun thinking of ways to address the energy problem by putting in place the right policies to help startups like the ones in which Lightspeed is investing (i.e. that are conducive to the advancement of the technologies).

**4) Corporate and social imperatives:** For first time, people are interested in changing the way they live. Entrepreneurs and investors believe that this change in attitude is sustainable this time around as compared with other points in our history. A sampling of some of these corporate and social imperatives: Corporations like Google have allocated hundreds of millions of dollars to technologies that are looking to come up with energy sources that are competitive with coal; Wal-Mart has a fleet that drives about a billion miles every year, has allocated \$0.5 billion to sustainability initiatives within their corporation, BP also donated \$0.5 billion to Lawrence Berkeley Labs for bioscience research; Toyota announced its millionth hybrid vehicle this year; IKEA announced a venture fund that will focus on building materials.

Lightspeed has reviewed over 700 cleantech companies. The majority of these focus on solar while a few "dirty" companies deal with coal and oil. To determine which of these companies are the most promising, Lightspeed has developed an eight point clean tech-specific evaluation criteria that it applies to investments: 1) Massive addressable market opportunity; 2) Strong technology and process defensibility; 3) Convincing fundamental economics; 4) Viable distribution strategy and infrastructure compatibility; 5) Capital efficiency; 6) Time-to-market consistent with investment horizon; 7) Macroeconomic, regulatory, and public policy tailwinds; 8) And lastly, having a team with start/scale-up experience and domain expertise.

He explained that within the solar industry it's all about economics and driving towards grid parity. For example, there are two different types of technology that the press talks about: Crystalline Silicon (which hasn't really changed in the last few decades and is used to power solar based calculators) and thin film development (relatively unknown, but has been receiving more investment over the past 3-5 years).

With respect to coal, the problem is clear; a lot of venture capitalists are asking if there is a way to focus on more high efficiency coals and how the market is rewarding that? High-efficiency coal carries a significant market premium.

Next, Mr. Chung discussed how policy support can contribute to clean tech innovation today. He used funding assistance for clean tech startups as an example, stating that California has a program through PERS that provides funding for early stage startups. A lot of the early stage companies don't have the venture capital funding when they need it the most.

1) The government can support the creation of clean tech clusters by doing the following: in clean tech, entrepreneurs need cooperation and communication between local groups and larger statewide groups to focus on clean tech advancement; 2) The government can help connect startups to key export markets; 3) The government can set an example: this is happening within California where businesses and corporations are helping the growth of these companies by using green building materials, LED lights, etc.; 4) The government can reduce uncertainty by making multi-year commitments to environmental policies: this is very important because if these innovators and investors have to wait for year-to-year renewals, it is hard to do long term planning. Many of the most successful start-up companies in the renewable energy sector depend on the federal ITC (investment tax credit); 5) The government can expand consumer and commercial incentives for clean tech adoption; 6) the government can inspire consumer and commercial adoption of green and clean technologies, thereby driving changes and making clear the economic benefits.

Mr. Chung noted that there are a number of things that the government can do to encourage the growth of these companies. Maintaining and expanding the federal Investment Tax Credit (ITC) is one of the major ones. He used the wind energy sector as an example: a production tax credit-incentive to harness wind power at night, when the wind really blows. A lot of wind energy innovators do not try to work with creating energy through wind at night because there is a lack of incentive. Without incentives to move in new directions, the progress of certain wind energy developers will be deterred.

#### **b. Barriers to Growth in the Solar Power Industry – Tom McCalmont**

Tom McCalmont provided an overview of the global solar market, stating that as of 2007, the market for solar was estimated to exceed \$20 billion and 3000 megawatts, and has been growing at a rate of 35% a year. The U.S. was once first, but has fallen to the 4<sup>th</sup> largest market in the world for solar. Germany is first, Spain #2, Japan #3. Germany is not too sunny; its average of sun per day is similar to Alaska, but Germany has created a market almost 6 times larger than that of the U.S. They have developed this market through policy measures, implementing appropriate incentives to grow the industry there.

He stated that aside from its market potential, solar energy is 100 percent free, as compared to nuclear or clean coal which remains costly. If we continue on the track we're on, within a decade, we'll approach the point where solar energy will become the least expensive energy generation source available due to the shrinking supply of fossil fuels and the rising cost to use them.

Solar power creates less environmental damage than other forms of power generation. Solar cells are made from silicon, a non-toxic element that is one of the most abundant resources on earth. The silicon cells are encased in glass, and mounted on aluminum frames, both of which can be recycled.

In addition to the moral imperative to use it, there is an immense economic opportunity associated with solar energy. Worldwide energy costs are estimated at \$14 trillion today. It is estimated that each new 1 megawatt of energy creates 7-11 new jobs, more than 3 times that of an equally sized, traditional power plant. There will be no outsourcing because the plants will be here on American soil. The jobs will pay good wages. This is important because it will serve as a stimulus for creating jobs that we've had difficulty creating in California over the past 25 years.

There are roughly 11.5 million households in California. It is estimated that we can convert up to 15% of these structures to solar power. That's at least 1.7 million houses that have potential to convert to solar. If we assume that the average for each home is 2.5 kilowatts per year, then that represents 4300 megawatts of new generated capacity and over 5000 new jobs per year to design and install these systems.

There remain enormous barriers to the advancement of solar usage. We must invest – not just financially, but in progressive policy. We must tackle issues of training workers, simplifying permits, creating standards and reducing paperwork.

The reason that an unsunny Germany is so inspirational is because it has effectively tackled these issues. To get solar panels on homes in Germany, you fill out a one page form. In California, it's more than 40 pages of forms. When the solar system installation is completed, the full package of forms and documents has 100-200 pages in it. The timeframe – start to finish - to have a system installed, connected to the grid and rebate to be returned is 26-52 weeks. Installing only takes a few days, the rest is permitting, paperwork and bureaucratic things. We need to bring all constituents to the table: manufacturers, installers, building departments, utilities, workforce partners, educational institutions, managers, government, etc. By sitting down together we can craft solutions that work for everyone.

Jobs creation and economic opportunity: With respect to building permits, they are administered by local jurisdictions, meaning that each city, county, or municipality has a different standard for approvals. Which means that for exactly the same system, one city might be able to do it over the counter in one day, while another city could take up to as much as 6 months. This additional delay requires many extra steps and drives up costs for the solar installer, city, and customer.

Building permits are implemented to ensure public safety, but if one city can ensure safety in one day, why can't other cities do the same? San Jose is an example of a city that does it in one day.

SolarTech has developed a simplified two page form that it has proposed to become the standard for solar permitting. It takes into account all of the necessary safety requirements for a permit, including electrical design, structural and roof analysis, and site details and has been reviewed by the foremost national authorities on solar permitting. SolarTech proposes that these guidelines be adopted statewide. Costs for permits vary widely. Some progressive cities have reduced and even eliminated permit fees for residential systems while others charge over \$1,000 in their jurisdiction for same permit. Some areas see permit fees as a way to bring in revenue. We need to view the solar industry as a jobs creation engine that will create far more economic opportunity for each city than will the \$1,000 permit fee. SolarTech has recommended that solar permitting costs be reduced to the amount necessary to cover actual office time review of the application, which for most cities would be less than \$300. SolarTech suggests that a standardized cost be established as state policy. This simple step would drive down the cost of solar systems for customers.

Utilities interconnection standards (i.e. standards governing the electrical connection between the power system and grid) are another challenge. There are no standards across the state's utilities, of which there are at least 60. It would be beneficial to get the utilities together to agree on standards.

With respect to training and workforce needs in the solar industry, everything that has been discussed impacts the workforce. We can't create jobs as fast as the market requires if we limit growth by way of onerous bureaucratic processes.

There are more than 700 solar installation companies in the state. Most of these are small businesses. There are very few training and education programs for solar workers and few standards for administration in each company. Each of the 700 companies has to bear the bulk of training costs. It can take up to a year to train the solar installers. This training burden is substantial and includes 3 months to ensure that the worker can maneuver on the roof and perform basic tasks and the remainder of the year to ensure that they can do this efficiently and safely. Solar energy is a new industry by definition; virtually every solar worker is transitioning from another field and learning to build these systems for the first time.

There are 3 broad categories of workers that make up the solar industry: solar installers, solar sales people, and inspectors. In addition, there are also large numbers of jobs in project management, construction supervision, permit preparation, engineering, design, marketing and finance.

Providing training for these jobs is a role for which the community college system is ideally suited. SolarTech, working with 6 community college districts in the Bay Area, has already taken action and has started working toward alleviating this problem. SolarTech has received an Industry Driven Regional Collaborative Grant which it is using to train solar installers. The curriculum was designed last year in San Jose. The program is now into its 3<sup>rd</sup> quarter of classes, and has already graduated more than 50 solar installers. There remains a need to scale and extend the classes across the state. We also need public access to curriculum and state standards for training and certification. And we need classes to teach trainers because there are so few instructors to teach these classes. Now is the time to make that investment. These kinds of programs are very important to middle class job creation. We must act quickly to bring the industry to scale.

### **Discussion**

Richard Baum asked the speakers if they had any comments on Propositions 7 or 10.

Tom McCalmont commented on Prop. 7 by saying that it sounds like a good idea, but it will actually hurt small businesses that are installing these systems. The California Solar Energy Industries Association is opposed to Prop 7. It's important not to put small companies at risk.

The Lt. Governor said that the discussion today had focused on the extraordinary opportunities that exist for California to transition away from petroleum and carbon based fuels to renewables of all kinds. To get there, both Andrew Chung and Tom McCalmont have identified a number of the stop signs and speed bumps that stand in the way of achieving a green economy. They have also addressed some of the policy changes that would ameliorate or eliminate these issues and drive the process forward.

Commissioner Daniel Curtin said that there are two types of stop signs and speed bumps: some that make logical sense without much political content, such as some of the issues on permits, and others that require some heavy political lifting.

Commissioner Aubry Stone suggested that it will have to be a multi-level approach. For example, with AB 32 and its interface with venture capital activity, there needs to be an analysis of the scoping requirements on what is the best way for implementation in order to assist small companies.

Andrew Chung responded and said that the venture capitalists have not done a direct analysis, but they have looked at the largest GHG emitting companies to see if they can solve the problem of too many GHG emissions. They are also looking at how to make company fleets environmentally friendly.

The Lt. Governor thanked the speakers for their presentations and introduced San Jose Mayor Chuck Reed.

### **c. San Jose's Green Vision Program: Mayor Chuck Reed of San Jose**

Mayor Reed discussed the City of San Jose's Green Vision plan, adopted last year. He noted that the major goals are to create 25,000 cleantech jobs, reduce electricity and power consumption by 50% and get all energy from clean renewable energy sources.

He focused his remarks on the implementation, philosophy and practicality of innovation and how it can be implemented at the local level. He emphasized the following as key contributors to the program's success: research collaboration and working with SolarTech, promoting business incubation to encourage job creation, recruiting testing companies like UL, and encouraging demonstration partnerships. He reported that the results have been positive, with San Jose attracting companies like Nanosolar and Solar Power. Mayor Reed launched the Mayor's Solar Challenge Initiative to encourage companies to help lower prices for solar power customers. The city is also working on permitting and other issues to help streamline processes. Regional collaboration is also an important part of the plan.

Mayor Reed next discussed public policy initiatives that can help the clean tech and solar industries grow. The city has 13 legislative agenda items: some are local, some are state, and some are national, such as

the federal investment tax credit. He noted that at the state level, the biggest impediment is bureaucratic inertia. He mentioned the Public Utilities Commission as an example.

### **Discussion**

Commissioner Aubry Stone noted that the Commission needs to start at the national level, to make the sweeping changes that must occur on a widespread level. As a lead state with innovative cities and a proactive environmental council, we should put pen to paper, and not leave it to the bureaucracy to get it together. We should present recommendations to the Governor so that he can present them to the national leaders. We can't assume that the Governor will put it together himself.

Andrew Chung stated that change can occur within California and spread to other states.

The Lt. Governor noted that the state's overarching strategy is AB 32 and that the next step is to address the major AB 32 implementation issues. Yet, we can't neglect certain issues, even small ones with potentially big impacts like the issue of permits. He said that in the next 3 months, the commission can develop an agenda with specific legislation as well as an agenda addressing necessary regulatory changes. He proposed developing an agenda for the next meeting on how to address the stop signs and speed bumps preventing forward progress.

The next CED meeting will be in December, and the commission will approve recommendations on specific industries from the advisory committees. The CED can give focus and articulate very specific places where the state can get the biggest bang for its buck. The role of the commission is to focus on and identify those particular changes in policy that will make a difference. He asked the three speakers to send a list of their top 5 priorities for the state, based on the topics discussed today.

Commissioner Daniel Curtin asked to consider training needs for the workforce as a priority, as well as public private partnerships.

### **III. Working Session**

Executive Director Richard Baum provided an update on recent Commission activity since the last quarterly meeting. He summarized a number of advisory committee and other special meetings and events that the CED was involved in. He noted that staff will start preparing the Annual Report, which is due in February. He also noted that the CED website, <http://ced.ca.gov>, is up and running.

Next, Mr. Baum outlined a few upcoming events:

1. The US Hispanic Chamber of Commerce national convention in Sacramento, at the end of September. The Chamber is holding its national convention in Sacramento. Commissioner Barreto will be part of that. There will be exhibits, speeches, major corporate participants, and receptions. It's a great networking opportunity.
2. The CED trade mission to China is scheduled for the 18-28 of February 2009.
3. The next CED meeting is early December. The final date and location is yet to be determined but will likely take place in Sacramento.

### **IV. Meeting Minutes Approval**

The Lt. Governor asked for a motion to approve the minutes from the May commission meeting. A motion was made and seconded and the minutes were approved.

### **V. Advisory Committees**

Mr. Baum asked the Commissioners to approve the nominees to the tourism and entertainment advisory committee. The Lt. Governor asked for comments and stated that additional members can be added in the future. A motion was made to approve the nominees, and the motion was seconded. The advisory committee nominees were approved.

Mr. Baum noted that the goods movement and international trade committee had a new nominee to be approved. The commissioners voted to add Rani Yadav-Ranjan to the committee.

Commissioner and Vice Chair Tom Nassif provided an update on the CED's agriculture advisory committee, noting that the committee would hold another meeting October 9 in Sacramento and the focus will be the effects of regulation on the agriculture industry.

Commissioner Stone asked if there has been any discussion in the agriculture committee related to federal programs for international trade in the agriculture industry. Commissioner Nassif said that the international trade subcommittee asked that the CED support the Colombia Free Trade agreement but that they did not have majority support within this group for passage, so the CED will not be putting forth that recommendation. However, the committee is very interested in trying to support free trade agreements where we finally see some benefit to the agriculture industry rather than having the industry used as a bargaining card for other industries, as has been done in the past.

Commissioner Stone followed up and said that there are a lot of grant programs through the federal government and that the agriculture industry could use funds to finance international trade missions. Commissioner Nassif said that Western Growers did a trip to China a few years back and it was partially funded through grant funds matching funds task program and the federal government, and that was very useful.

The Lt. Governor mentioned the upcoming trade mission to China, stating that agriculture will be one of the important pieces; some of it will be export opportunities to China, and that the food safety issue is likely to be taken up.

Mr. Baum asked Commissioner Virginia Chang Kiraly to provide a brief update on the biotechnology committee.

Commissioner Chang Kiraly noted that the biotech advisory committee held its first meeting in San Francisco at the end of May. The committee's main concern was how to keep the biotech industry in California competitive. The committee will be putting together and presenting a set of recommendations to the CED at the next meeting regarding corporate tax policies, workforce recruiting, the role of universities, and incentivizing R&D. The Lt. Governor made comments related to the tax policy issues.

Mr. Baum provided brief updates on behalf of the aerospace and goods movement advisory committees' activities, stating that they are working on their recommendations and they will present them to the CED in December.

#### **VI. Discussion and Public Comment**

The Lt. Governor asked for discussion and comments from the commissioners and members of the public present at the meeting.

The following topics were discussed: impact of regulatory costs on California businesses; the state's role in economic development and investment promotion; plans for the next CED quarterly meeting; and regulatory agency issues impacting the Central Valley.

#### **VII. Adjournment**

The Lt. Governor thanked the advisory committees and the speakers for their informative presentations and adjourned the meeting at approximately 1:10 p.m.

Meeting minutes submitted by Michele Gault on November 10, 2008